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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|--------------------------|------------------|
| 10/624,340 | 07/21/2003 | Brent A. McClure | MI22-2067 | 6987 |
| 21567 7590 01/09/2007 WELLS ST. JOHN P.S. 601 W. FIRST AVENUE, SUITE 1300 SPOKANE, WA 99201 | | | EXAMINER HA, NGUYEN T | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2831 | |

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS | 01/09/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| | | | | |
|------------------------------|------------------------|--|---------------------|--|
| Office Action Summary | Application No. | | Applicant(s) | |
| | 10/624,340 | | MCCLURE ET AL. | |
| | Examiner | | Art Unit | |
| | Nguyen T Ha | | 2831 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5-41,52,55-63 and 71-78 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,5,8-11,13-41,52,55,57-63 and 71-78 is/are allowed.
- 6) ☒ Claim(s) 6,7,12 and 56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>1006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 6-7, 12 and 56 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 6-7, 12 and 56 are rejected under 35 U.S.C. 102(e) as being anticipated by Moradi et al. (US 6,583,441).

Regarding claims 6 and 56, Moradi et al. disclose a capacitor construction (figure 6) comprising:

- a first electrode (20);
- an insulative nitride layer (24) between the first electrode and a surface supporting (12) the capacitor construction;
- a capacitor dielectric (28) over the first electrode; and
- a second electrode (32) over the capacitor dielectric (see column 5, lines 18-40).

Regarding claim 7, Moradi et al. disclose the first electrode is on the nitride layer (figure 4).

Regarding claim 12, Moradi et al. disclose the nitride layer comprises silicon nitride (column 3, lines 47-50).

Allowable Subject Matter

4. Claims 1,5, 8-11 13-41, 52, 55, 57-63, and 71-78 are allowed.

The following is an examiner's statement of reasons for allowance:

With respect to claims 1,5, 8-11, 52, 55, 57-58, 71-72 and 75-76 the prior art alone or in combination does not teach the limitation of a capacitor construction comprising a conductive nitride layer between a first electrode being in conductive contact with the nitride layer, and a second electrode over the capacitor dielectric, the capacitor construction exhibiting a lower RC time constant compared to an otherwise identical capacitor construction lacking the conductive nitride layer.

With respect to claims 13-23, the prior art alone or in combination does not teach the limitation of a capacitor construction comprising: a rough silicon layer, a nitride layer under the rough silicon layer, a capacitor dielectric over the rough silicon layer.

With respect to claims 24-33, the prior art alone or in combination does not teach the limitation of a capacitor construction comprising: a conductive rough silicon layer over a support surface, a nitride layer between the rough silicon layer and the support surface, a first electrode comprising the rough silicon layer.

With respect to claims 34-41, the prior art alone or in combination does not teach the limitation of a capacitor construction comprising: a composite first electrode

comprising a first conductive layer over and in conductive contact with the storage node and comprising a conductive polysilicon layer over and in conductive contact with the first conductive layer, the first conductive layer exhibiting a first conductivity greater than a second conductivity of the polysilicon layer.

With respect to claims 59-63, the prior art alone or in combination does not teach the limitation of a capacitor construction forming method comprising: forming a conductive polysilicon layer over and in conductive contact with the first conductive layer, the first conductive layer exhibiting a first conductivity greater than a second conductivity of the polysilicon layer and the first conductive layer and polysilicon layer being comprised by a composite first electrode.

With respect to claims 73-74 and 77-78, the prior art alone or in combination does not teach the limitation of a memory device comprising: a composite first electrode comprising a first conductive layer over and in conductive contact with the storage node and a conductive polysilicon layer over and in conductive contact with the first conductive layer, the first conductive layer exhibiting a first conductivity greater than a second conductivity of the polysilicon layer.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nguyen T. Ha whose telephone number is 571-272-1974. The examiner can normally be reached on Monday-Friday from 8:30AM to 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on 571-272-2800 ext. 31. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NGUYEN T. HA
PRIMARY EXAMINER

NH

January 4, 2007